

**ABSTRACT**

Methods of operating a downhole tool comprise thermally-controlling the tool by sensing a temperature and controlling the tool in response to the sensed temperature. Thermally-controlled downhole tools comprise a control element responsive to a change in temperature that control flow into, out of, or through a wellbore. Methods and systems for servicing a wellbore comprise using a thermally-controlled tool comprising a thermally-controlled valve (TCV) in a wellbore. The TCV includes a valve body comprising an injection port for allowing material to flow into or out of the wellbore and an opening/closing mechanism for regulating flow of the material through the injection port in response to a change in temperature. The valve body may be coupled to a downhole conduit. A plurality of TCV's may be arranged in the wellbore to control the injection of steam into the wellbore or the recovery of oil from the wellbore.